

WHAT IS CLAIMED IS:

1. A system for preventing gas currents from impacting a coating process for a multi-slot slide bead coating apparatus, comprising:
 - a) a multi-slot slide bead coating apparatus for forming a multilayer composite including a carrier layer and a slide surface;
 - b) a web for coating by the multi-slot slide bead coating apparatus; and
 - c) a proximity shield placed in close proximity to both the web and the slide surface of the multi-slot slide bead coating apparatus such that gas currents do not disturb the multilayer composite on the slide surface.
2. The system claimed in claim 1, wherein the proximity shield is placed within 2.5- 4.5 mm of the web to form a shield-to-web gap.
3. The system claimed in claim 1, wherein the proximity shield is placed within 3.18 mm of the web.
4. The system claimed in claim 1, wherein the carrier layer has a viscosity < 1 cp and a wet thickness < 5 microns.
5. The system claimed in claim 1, wherein the carrier layer has a viscosity between 0.7 and 1.0 cp and a wet thickness about 3 microns.
6. The system claimed in claim 1, wherein the proximity shield placed near the slide surface forms a shield-to-slide surface gap, having a height measurement range of 4-13 mm.

7. The system claimed in claim 1, wherein the proximity shield placed near the slide surface forms a shield-to-slide surface gap, having a height measurement of 6 mm.

8. The system claimed in claim 1, wherein the proximity shield is prevented from contacting a coating liquid on the slide surface of the multi-slot slide bead coating apparatus.

9. The system claimed in claim 8, wherein the proximity shield is angularly cut to form a step cutback angle of 0-65°.

10. The system claimed in claim 1, wherein the proximity shield includes a shield lip having a curvature range of 1 micron to 10 mm.

11. The system claimed in claim 1, wherein the proximity shield includes a front face curved to match a corresponding curvature of a coating backing roller in the multi-slot slide bead coating apparatus.

12. The system claimed in claim 1, further comprising:
d) an edge guide for creating a seal by mating with the proximity shield, wherein the edge guide has an overhang portion which extends over a coating layer.

13. The system claimed in claim 1, wherein the proximity shield is constructed of materials selected from the group consisting of plastic, glass, metal, metal alloys, wood and paper.

14. The system claimed in claim 13, wherein the proximity shield is constructed of a transparent plastic and coated with a semi-transparent metal.

15. The system claimed in claim 12, wherein an edge guide holder holds the edge guide to the slide surface.

16. The system claimed in claim 15, wherein the edge guide holder includes means for holding the proximity shield in place to form a shield-to-web gap.

17. A system for preventing gas currents from impacting a coating process for a multi-slot slide bead coating apparatus, comprising:

- a) a multi-slot slide bead coating apparatus for forming a multilayer composite including a carrier layer and an inclined slide surface; wherein the carrier layer is the lowermost layer of the multilayer composite;
 - b) a web for coating by the multi-slot slide bead coating apparatus;
- and
- c) means for placing a proximity shield in close proximity to both the web and the inclined slide surface of the multi-slot slide bead coating apparatus such that gas currents do not disturb the multilayer composite on the inclined slide surface.

18. The system claimed in claim 17, wherein the proximity shield is placed within 2.5- 4.5 mm of the web to form a shield-to-web gap.

19. The system claimed in claim 17, wherein the proximity shield is placed within 3.18 mm of the web.

20. The system claimed in claim 17, wherein the carrier layer has a viscosity < 1 cp and a wet thickness < 5 microns.

21. The system claimed in claim 17, wherein the carrier layer has a viscosity between 0.7 and 1.0 cp and a wet thickness about 3 microns.

22. The system claimed in claim 17, wherein the proximity shield placed near the slide surface forms a shield-to-slide surface gap, having a height measurement range of 4-13 mm.

23. The system claimed in claim 17, wherein the proximity shield is prevented from contacting a coating liquid on the slide surface of the multi-slot slide bead coating apparatus.

24. The system claimed in claim 23, wherein the proximity shield is angularly cut to form a step cutback angle of 0-65°.

25. The system claimed in claim 17, wherein the proximity shield includes a shield lip having a curvature range of 1 micron to 10 mm.

26. The system claimed in claim 17, wherein the proximity shield includes a front face curved to match a corresponding curvature of a coating backing roller in the multi-slot slide bead coating apparatus.

27. The system claimed in claim 17, further comprising:

d) an edge guide for creating a seal by mating with the proximity shield, wherein the edge guide has an overhang portion which extends over a coating layer.

28. The system claimed in claim 17, wherein the proximity shield is constructed of materials selected from the group consisting of plastic, glass, metal, metal alloys, wood and paper.

29. The system claimed in claim 28, wherein the proximity shield is constructed of a transparent plastic and coated with a semi-transparent metal.

30. A method for preventing gas currents from impacting a coating process for a multi-slot slide bead coating apparatus, comprising the steps of:

- a) providing a multi-slot slide bead coating apparatus for forming a multilayer composite including a carrier layer and a slide surface;
- b) providing a web for coating by the multi-slot slide bead coating apparatus;
- c) placing a proximity shield in close proximity to both the web and the slide surface of the multi-slot slide bead coating apparatus such that gas currents do not disturb the multilayer composite on the slide surface.

31. The method claimed in claim 30, wherein the proximity shield is placed within 2.5- 4.5 mm of the web to form a shield-to-web gap.

32. The method claimed in claim 30, wherein the proximity shield is placed within 3.18 mm of the web.

33. The method claimed in claim 30, wherein the carrier layer has a viscosity < 1 cp and a wet thickness < 5 microns.

34. The method claimed in claim 30, wherein the carrier layer has a viscosity between 0.7 and 1.0 cp and a wet thickness about 3 microns.

35. The method claimed in claim 30, wherein the proximity shield placed near the slide surface forms a shield-to-slide surface gap, having a height measurement range of 4-13 mm.

36. The method claimed in claim 1, wherein the proximity shield is prevented from contacting a coating liquid on the slide surface of the multi-slot slide bead coating apparatus.

37. The method claimed in claim 36, wherein the proximity shield is angularly cut to form a step cutback angle of 0-65°.

38. The method claimed in claim 30, wherein the proximity shield includes a shield lip having a curvature range of 1 micron to 10 mm.

39. The method claimed in claim 30, wherein the proximity shield includes a front face curved to match a corresponding curvature of a coating backing roller in the multi-slot slide bead coating apparatus.

40. The method claimed in claim 30, further comprising:

d) an edge guide for creating a seal by mating with the proximity shield, wherein the edge guide has an overhang portion which extends over a coating layer.

41. The method claimed in claim 30, wherein the proximity shield is constructed of materials selected from the group consisting of plastic, glass, metal, metal alloys, wood and paper.

42. The method claimed in claim 41, wherein the proximity shield is constructed of a transparent plastic and coated with a semi-transparent metal.

43. The method claimed in claim 40, wherein an edge guide holder holds the edge guide to the slide surface.

44. The method claimed in claim 43, wherein the edge guide holder includes means for holding the proximity shield in place to form a shield-to-web gap.

45. A method for preventing gas currents from impacting a coating process for a multi-slot slide bead coating apparatus, comprising the steps of:

a) providing a multi-slot slide bead coating apparatus for forming a multilayer composite including a carrier layer and an inclined slide surface; wherein the carrier layer is the lowermost layer of the multilayer composite;

b) providing a web for coating by the multi-slot slide bead coating apparatus; and

c) means for placing a proximity shield in close proximity to both the web and the inclined slide surface of the multi-slot slide bead coating apparatus such that gas currents do not disturb the multilayer composite on the inclined slide surface.